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EXAMINER

MUSSER, BARBARA J

ART UNIT PAPER NUMBER

1733

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,363

Applicant(s)

BERLIN ET AL.

Examiner

Barbara J. Musser

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 15, it is unclear what is meant by a web surface temperature.

3. Claim 24 recites the limitation "the layer of thermoplastics" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. It appears this claim is intended to depend from either claim 22 or 23.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-11, 13, 14, 18, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desaulniers(U.S. Patent 3,499,820) in view of Berlin et al.

Desaulniers discloses forming a laminate used in food packaging by applying a polymer dispersion containing an inorganic planar material to a paper substrate and driving off the solvent.(Col. 3, ll. 25-28; Col. 4, ll. 20-28; Col. 7, ll. 1-39) The reference

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does not disclose applying this laminate to a paperboard core. Berlin et al. discloses forming a laminate of a polymer film coated with a polymer dispersion to a paper core. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the laminate of Desaulniers to a paperboard core as shown by Berlin et al. since the laminate of Berlin et al. suggests an additional layer is necessary and since the paper/polymer laminate of Desaulniers is too flexible to serve as a container without additional support as shown in Berlin et al. where the polymer/polymer laminate is applied to an additional support before use.

Regarding claim 2, Desaulniers discloses including an exfoliating agent, indicating the inorganic material is in an exfoliated and delaminated state.(Col. 6, ll. 14)

Regarding claim 3, the polymer dispersion is applied by coating the substrate.(Col. 7, ll. 20)

Regarding claim 4, the range of inorganic material in Desaulniers includes that of applicant.(Col. 5, ll. 41-46)

Regarding claim 5, the range of polymer in Desaulniers includes that of applicant.(Col. 5, ll. 41-46)

Regarding claim 6, Desaulniers is silent as to the amount of material applied to the substrate, but Berlin et al. discloses the polymer dispersion is applied at a quantity of 1-10 g/m².(Pg. 9, ll. 34) It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the polymer dispersion at a rate of 1-10 g/m² since both references are making the same types of material for the same use and therefore would need the same amount of material.

Regarding claims 7 and 8, Desaulniers does not disclose the polymer dispersion containing polyvinyl alcohol. Berlin et al. discloses the polymer dispersion can contain polyvinyl alcohol (Pg. 9, ll. 32) and that this material provides superior oxygen barrier properties. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use polyvinyl alcohol as the polymer in the polymer dispersion of Desaulniers and Berlin et al. since it is known to have superior oxygen barrier properties (Col. 9, ll. 32) which would be desirable in laminates intended to protect items from contact with the atmosphere. (Desaulniers, Col. 3, ll. 25-27)

Regarding claim 9, Desaulniers discloses the polymer dispersion is dried at a temperature of 100-140 C. (Col. 7, ll. 45)

Regarding claims 10 and 11, Desaulniers discloses the polymer dispersion can contain ethyl acrylate, another name for ethylene acrylic acid. (Col. 9, ll. 4-5)

Regarding claim 13, Desaulniers et al. shows the barrier layer can be mainly the inorganic laminar material and the polymer (Col. 5, ll. 41-46) and Berlin et al. discloses the polymer can be starch. (Pg. 6, ll. 12)

Regarding claim 14, Desaulniers discloses the polymer dispersion is dried at a temperature of 100-140 C. (Col. 7, ll. 45) Ethyl acrylate is a curable material.

Regarding claim 18, since paper is not a moisture barrier and the packaging laminates are intended to protect material from moisture as well as oxygen, It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a plastic coated paper as the carrier since this would prevent moisture from moving through the paper layer and contacting the PVA layer.

6. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desaulniers and Berlin et al. as applied to claim 1 above, and further in view of Berlin et al. (WO 97/22536)

Berlin et al. does not disclose forming the barrier layer from a mixture of ethylene acrylic acid and polyvinyl alcohol though it does disclose the barrier layer containing polyvinyl alcohol and that the barrier layer can be mixed with something to increase its adhesiveness. (Pg. 8, ll. 18-20, 31-35) Berlin et al. discloses mixing ethylene acrylic acid with polyvinyl alcohol to create a gas barrier that retains superior gas barrier properties even when in a damp environment. (Pg. 5, ll. 10-1; Pg. 7, ll. 1-2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to mix the polyvinyl alcohol barrier layer of Berlin et al. and Kotani et al. with ethylene acrylic acid since Berlin et al. discloses that mixing a polymer such as ethylene acrylic acid with polyvinyl alcohol creates a gas barrier that retains superior gas barrier properties even when in a damp environment. (Pg. 5, ll. 10-1; Pg. 7, ll. 1-2)

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Desaulniers and Berlin et al. as applied to claim 1 above, and further in view of Kotani et al.

The references cited above do not disclose two separate drying steps. Kotani et al. is directed to a polymer dispersion containing an inorganic material which is applied to a film and used as food packaging and discloses the composition can be heated to 110-220°C after removal of the solvent, indicating a two step drying process. (Pg. 5, ll. 4-6) It would have been obvious to one of ordinary skill in the art at the time the

invention was made to use a two step drying process in Desaulniers and Berlin et al. since Kotani suggests such for the same types of materials. One in the art would appreciate that the specific temperatures used would depend on the materials used to form the barrier layer. Absent unexpected results, the temperatures claimed are considered obvious.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Desaulniers and Berlin et al. as applied to claim 1 above, and further in view of Merdem et al.(U.S. Patent 5,057,359)

The reference cited do not disclose the weight of the paper used. Merdem et al. is directed to a method of forming a paper laminate used as a container for food having a paper layer bonded to a paperboard substrate.(Abstract) The paper layer can have a weight of 25-100g/m².(Col. 3, ll. 23-25) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any conventional weight paper in Desaulniers and Berlin et al. since one in the art would appreciate that any conventional paper, such as that of Merdem et al., could be used. Only the expected results would be achieved.

9. Claims 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desaulniers and Berlin et al. as applied to claim 1 above and further in view of Kobinata et al.(U.S. Patent 5,849,125)

Desaulniers discloses the substrate can be coated with a primer before application of the polymer dispersion but does not disclose extruding the adhesive between the core and the carrier. Kobinata et al. discloses a method of making a

laminated packaging material wherein an adhesive layer is extruded to bond the gas barrier to the paper core.(Col. 4, ll. 52-67) It would have been obvious to one of ordinary skill in the art at the time the invention was made to extrude the adhesive layer to bond the paper core and barrier layer of Desaulniers and Berlin et al since Kobinata et al. shows extruding an adhesive to bond together the same type materials as in Berlin et al., namely a paper core and a barrier layer suggesting it is a conventional method of bonding these types of materials together..

Regarding claim 20, while Berlin et al. shows bonding the barrier layer to the core, the specification does not disclose that the barrier layer must face the core. Rather it appears that having the barrier layer face the core is only exemplary. One in the art would appreciate that either the barrier layer or the carrier could face the core. Only the expected results would be achieved.

Regarding claims 21 and 23, Desaulniers and Berlin et al. do not disclose applying additional thermoplastic layers to both the paper core and the carrier. Kobinata et al. discloses applying thermoplastic layers to the outer surfaces of both the paper core and the barrier layer.(Figures 2 and 3) It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply thermoplastic layers to the outer surfaces of both the paper core and the barrier layer to protect them as shown for example by Kobinata et al.

Regarding claim 22, Berlin et al. discloses applying the adhesive between the barrier layer and the paper core.(Figure 2)

Regarding claim 23, while the references do not disclose applying the barrier layer on both sides of the carrier, one in the art would appreciate that it could be to increase the gas barrier properties and would do so for this reason.

10. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Desaulniers, Berlin et al., and Kobinata et al. as applied to claim 22 above and further in view of Frisk(U.S. Patent 6,071,626)

The references cited above do not disclose including a light barrier in the adhesive extruded between the barrier layer and the paperboard core. Frisk discloses adhesives in laminates for use with food products can have light barrier materials therein.(Abstract; Figure 11) It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a material in the adhesive of Desaulniers, Berlin et al., and Kobinata et al. which acts as a light barrier since Frisk discloses it is known to include materials in the adhesive with act as light barriers and since it is known in the packaging arts that excellent light barrier properties are necessary to reduce problems with the packaged material.

Response to Arguments

11. Applicant's arguments filed 2/18/04 have been fully considered but they are not persuasive.

Regarding applicant's argument that Berlin et al., Kotani et al., and Farrell et al. do not disclose performing dispersion coating and drying operations on a separate carrier and the combining the carrier with a core layer, Berlin et al. discloses applying an

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oxygen gas barrier layer as a dispersion coating to a liquid barrier layer, drying it(Pg. 6, ll. 34- Pg. 7, ll.3), and then laminating it to a core layer.(Pg. 9, ll. 5-6)

In response to applicant's argument that it would not have been obvious to replace the polylactide layer of Berlin et al. and Kotani et al. with a paper layer, Desaulniers shows applying the polymer dispersion to a paper layer.

Regarding applicant's argument that Farrell does not disclose dispersion coating may be applied to a thin paper carrier, Desaulniers shows applying the polymer dispersion to a paper layer.

Regarding applicant's argument that the references do not disclose a paper weight of 5-35 g/m², Merdem et al. discloses a paper weight of 25-100g/m².

Regarding applicant's argument that Kobinata does not disclose using paper as a carrier for a polymer dispersion, Desaulniers teaches such. Kobinata is used to show other known features of paperboard laminates such as the use of an extruded adhesive to bond the layers together and the use of thermoplastic layers to protective the exterior surfaces of the laminate.

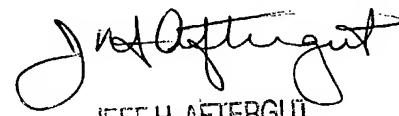
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Barbara J. Musser** whose telephone number is **(571) 272-1222**. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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